

In Part II, "Racism," the data set forth in Part I are applied to the argument in two considerable chapters of which the first, "A Natural History of Racism," traces this collective egotism into the remote past and thence down the centuries to modern times. But at first it was concerned only with class distinctions. "It was directed by the aristocrats against the populace"; and it is curious that its first champion, the Count de Boulainvilliers, though a Frenchman, claimed superiority on the grounds that the nobles were pure-blooded Germani whereas the populace were by race mere Gauls or Celts. But the real start of the movement came later. "The great classic racist pronouncement was published in 1853-57: Count de Gobineau's *Essay on the Inequality of Human Races*. Like Boulainvilliers, he taught that the hope of the world was and had always been the fair-haired Teutons, whom . . . he now called Aryan." The influence of Gobineau's teaching is examined at some length, and we then come to the anthropo-sociologists who dealt in anthropometric data and especially the cephalic index; and although most of the investigators were Frenchman, once more it was the long-headed Nordics who were found to be the children of light. Thus was the way made smooth for Hitler's *Herrenvolk*.

The final chapter, "Why Then Race Prejudice?" contains the argument based on the facts presented in the preceding chapters. The myth of the "pure race" having been disposed of, the question remains whether among existing races there are any which are demonstrably superior or inferior to the others. Dr. Benedict's conclusion seems to be that there are no such racial differences; at any rate, there is nothing but lack of good will to prevent all existing peoples from living harmoniously side by side on terms of, at least, civil equality and with full mutual recognition of the rights of each.

In this chapter the social and political sympathies of the author are allowed to make themselves visible; but, inasmuch as Dr. Benedict has nowhere distorted the facts or advanced fallacious arguments, these are not our concern. As to the book as a whole, it is

a valuable contribution to its subject, containing a mass of interesting matter, historical, biological, and anthropological, presented with a literary skill which will render it acceptable and pleasant to the general reader; who will gather from its agreeable and lively pages not only a clear idea of the subjects of race and the racist ideology but a good deal of information on the sociological problems and movements which are at present occupying so much of the attention of planners of the post-war world.

R. AUSTIN FREEMAN.

GENETICS

Haldane, J. B. S. *New Paths in Genetics*. London. 1941. Allen and Unwin. Pp. 206, with index. Price 7s. 6d.

It is a great pleasure to welcome, though (owing to war-time conditions) rather belatedly, this new book on genetics by the eminent and truly unique Professor of Biometry at University College. It is as good a thing, for its size, as anything he has ever done, and should be carefully read by all followers of this journal, whether they would describe themselves as eugenisists or not. In general, it has the character of books such as the "Recent Advances in . . ." series, but since the lectures in it were originally given by invitation at the University of Groningen in Holland, the author was free to select just those aspects of the subject which he himself felt to be most interesting or important.

The book, which (though only some 200 pages long) is well indexed and (considering war-time difficulties) excellently produced, divides into five chapters: the first on the science of genetics in general, the second and third on the biochemical and embryological aspects of genetics respectively, and the fourth and fifth on human heredity, dealing successively with abnormalities and with formal genetics. Each chapter is headed by a quotation from Dante, always apt, if sometimes rather grim. Haldane is sparing

of mathematics in this book, but at the same time it is not by any means addressed to the ordinary general reader; it requires considerable previous knowledge though not beyond what would be expected in the "lay" readers of this journal.

We may profitably take up a few points which occurred to the reviewer in a first reading. It was good to emphasize (p. 13) that the distinction between nature and nurture, between genotype and phenotype, cannot be regarded as absolute. A virus transmitted to a plant from its mother could hardly be distinguished from other extra-nuclear self-reproducing bodies, such as the chloroplasts, which are regarded as part of the plant's nature. The work of Lysenko on potatoes and Little on mice demonstrates this. It is all part and parcel of the breakdown between the sharp definitions of viruses, hormones, enzymes, vitamins, and drugs, which has been going on for years, and will certainly continue.

It goes without saying that Haldane has many wise remarks to make on social biology, and the book deserves the closest attention from this point of view. For example (p. 36) he points out that the geneticist, as a biologist, cannot say what abnormalities are so undesirable as to warrant interference with parenthood in order to secure, after a very long period, their abolition. Nor can he say what measures of interference are best, whether a given type should be sterilized or segregated, whether compulsion or persuasion is to be preferred, and so on. These are ethical and political questions, and if the biologist answers them he does so as a citizen and not as a geneticist. Measures of negative eugenics, therefore, would be likely to differ very much in their character according to whether they were put into force in a democratic or a totalitarian state. Later, Haldane suggests that the best practical eugenic measures will be found to be somewhere between the extreme programme of the Nazis and the refusal of the Roman Catholics to agree to any programme. The present book touches, of course, on the question of racialism, and shows that the extreme forms of any theory

of racial superiority are demonstrably false. So far as general political theory is concerned, it takes its stand, in somewhat different words, upon the aphorism coined originally by H. S. Jennings, that "the form of society most in accordance with the facts of biology is a democracy which can produce experts."

Coming to the more technical chapters, readers will enjoy the lucid discussion of the inheritance of flower colour in relation to the chemistry of the anthocyanins, which goes a good deal beyond the 1937 account in *Perspectives in Biochemistry*. The rapidly growing knowledge on the gene control of tyrosine metabolism in mammals is, however, also very interesting (homogentisic acid in alkaptonuria; phenyl-pyruvic acid in mental disease; melanin formation, etc.). Discussion of the subject of genetics and development follows much the same lines as Goldschmidt's *Physiological Genetics*, special attention being paid to the multiple-effect genes with obscure metabolic actions, such as Grüneberg's "grey lethal." It is emphasized that genetical abnormalities are like embryological experiments done "in reverse," for the effects are seen though the observer does not know precisely what experiment nature performed at the earlier stages. Obviously the coming union of embryology and genetics will be most fruitful for our knowledge of the mechanism of development and its genic controls.

The chapters on human genetics are admirable, and even fascinating. On p. 118 Haldane gives a table showing the percentages of polydactylous guinea-pigs in four lines. This indicates that polydactyly is determined both by nature and nurture, the predominant but not the sole factor in nurture being the mother's age. The table, says the author, is very instructive, for the extreme eugenicist would read it horizontally (being interested in the differences between the different strains), while the extreme environmentalist would read it vertically (being interested in the differences between individual conditions). Biologists, in the true sense, would read it both horizontally and vertically. Similar data are given for mongolian imbecility in relation to maternal

age in man. It was on this page that the reviewer noted the only two expressions open to criticism in the book. He feels that the use of the term "mongols" for "mongoloid imbeciles" is rather lacking in courtesy towards our allies in the Far East, and he thinks that "primogeniture" on p. 117 is a misprint for "primiparity."

It will be seen that if these trivial points are all that he can bring up, as a reviewer, to maintain the critics' reputations, the book must indeed be excellent. And so it is. May it have wide circulation and general praise.

JOSEPH NEEDHAM.

HOUSING & POPULATION

Elsas, M. J. *Housing Before the War and After*. London. 1942. King and Staples. Pp. 69. Price 5s.

THIS latest book on housing sets out the results of an inquiry which was initiated by the Population Investigation Committee. It discusses, in the light of previous experience, the factors which will have to be taken into account in assessing the nature and magnitude of the nation's post-war housing requirements, emphasizing in particular the

influence that will be exercised upon them (as well as upon the economic structure of the country) by changes in the demographic structure of our population.

The author reviews housing and the steps taken to encourage building during the inter-war period 1918-1939, comparing what was achieved with what, according to various estimates made at the time, was actually needed. With an increasing and ageing population the tendency has been for an increase in the number of separate families, smaller in average size but each requiring separate housing accommodation. The war has introduced new factors, both physical (through destruction by enemy action) and economic; and in his assessment of our future housing needs the author takes account of these as well as of anticipated population trends (which are discussed on the basis of estimates by the Registrar-General and Dr. Enid Charles).

Although an accurate measure of the problem will be impossible until the war is over, it is all to the good that such a careful study of the factors involved should have been made now. The book should be carefully studied by everyone concerned in post-war reconstruction.

HOLROYD F. CHAMBERS.

OTHER NOTICES

Bowley, Agatha H., Ph.D. *The Natural Development of the Child*. London, 1942. Livingstone. Pp. 172. Price 8s. 6d.

DR. BOWLEY has undertaken the task of outlining in a small handbook the whole development of the child from birth to adolescence. The work is intended as a guide for parents and teachers. The author's experience as teacher, psychologist to a child guidance clinic and training college lecturer has admirably fitted her for the difficult job of putting simply and concisely material in itself complex and vast.

Each stage of childhood—babyhood, the pre-school period, the middle years of childhood and adolescence—is dealt with in order, and a genetic history of physical, intellectual and emotional development is built up. The difficulties to be expected at each age are outlined, together with

the best and most up-to-date ways of handling them. Carefully selected and very charming photographs illustrate the book, and theoretical statements are illuminated by instances from the behaviour of individual children.

Complete success in such an undertaking is impossible for any psychologist, and in a sense is more difficult to attain the better the psychologist. This is because of the nature of the material revealed by modern psychological research. The unconscious motives which govern so much of our behaviour seem to the average adult at first reading not only fantastic and absurd (even if not indecent), but also most unlikely. Stated in a sentence or two, as they must be in a short textbook, they may provoke unbelief and hostility. For this reason, and because not all technical terms are explained, the book will be most useful to students who have already had some psychological